New Perspectives on Aristotle's *De caelo*

Edited by

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BRILL

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ARISTOTLE'S *DE CAELO*: A BIBLIOGRAPHY[1]

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A. *Medieval and early modern manuscripts*[2]

Family a

Parisinus graecus 1853 (E) *ca* 10th century, *De caelo* on folios 69–106 v°.
Vaticanus gr. 253 (L after Bekker 1870) 13th century.
Vaticanus Ottobonianus gr. 188, 15th century, based on *Vaticanus gr.* 253 and the exemplar used by William of Moerbeke in his Latin translation (Γ).

Family b

Vindobonensis phil. gr. 100 (J) 9th century (second half), *De caelo* on folios 56–86.
Marcianus gr. 214 (H^a in Bekker 1870) 12th century.
Marcianus gr. 200 (Q in Bekker 1870) 1457, copied from J by Jean Rhosos.
Marcianus gr. 210 (F^m in Mioni 1958, U in Longo 1961) 13th century, combines *Marcianus gr.* 214 and *Vaticanus gr.* 253.
Marcianus gr. 211 (E^b in Bekker 1870, V in Moraux 1954 and in Longo 1961) 13th century, derived from *Marcianus gr.* 210.
Marcianus gr. 212 (G^a in Bekker 1870) 15th century, derived from *Marcianus gr.* 214 with variants from *Marcianus gr.* 211.
Marcianus gr. 206 (f in Bekker 1870) 1467, copied at Rome by Charitonymus Hermonymus of Lacedemonia, based on *Marcianus gr.* 211.

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[1] The editors are very grateful to Andrea Falcon for his valuable suggestions and additions to this bibliography, and to Veronica Shi for her editorial work. We also thank Gerhard Endress for his kindness in supplying us with the information for the entries on the Arabic tradition.

[2] Following Moraux (1965): cf. Moraux (1954).

Laurentianus 87,17 (j in Longo 1961) 14th century.
Vindobonensis phil. gr. 64 1457, copied under the direction of Jean Rhosos.
Laurentianus 87,11, attributed to Jean Rhosos.
Riccardianus gr. 14 (O^b in Bekker 1870) 15th–16th century.
Vaticanus gr. 1027 (H after Bekker 1870) 12th century.
Same subgroup as *Vaticanus gr.* 1027
Vaticanus Urbinas gr. 37 (M after Bekker 1870) 14th century.
Parisinus Coislinianus 169 (m in Longo 1961) 14th century.
Laurentianus 87,7 (F after Bekker 1870) 14th century.
Vaticanus gr. 499 (k in Bekker 1870, f in Longo 1961) 13th–14th century, related to *Laurentianus* 87,7.
Parisinus gr. 2595 (e in Longo 1961).

Unconnected subgroups

Ambrosianus gr. 403, G 61 sup. (G in Longo 1961) 13th century.
Direct descendants
Vindobonensis phil. gr. 2 1496, copied in the Abruzzes by Robert Maioranos.
Vindobonensis phil. gr. 27, early 16th century.
Parisinus suppl. gr. 642 (s in Moraux 1954, P in Longo 1961) 14th century.
Parisinus gr. 2032 (i in Bekker 1870, p in Longo 1961) 14th century.
Parisinus Coislinianus 166 (o in Bekker 1870, O in Moraux 1954) end of 14th century.
Parisinus gr. 1860 (l in Bekker 1870) 15th century.
Vaticanus gr. 249, 15th century.
Laurentianus 81,1 (S in Bekker 1870 and in Fobes 1913, Q in Longo 1961) end of 13th century, copied by Jean Panaretes.
Vaticanus Palatinus 161 (P in Moraux 1954) 1442, copied by Jean Scutariotas from *Laurentianus* 81, 1.
Ambrosianus gr. 512, M 46 sup. (A in Moraux 1954, W in Longo 1961) 13th century.
Vaticanus Urbinas gr. 38 (Q^a in Bekker 1870) 15th century, copied by Michel Apostolios and modeled on *Ambrosianus gr.* 512, M 46 sup.

Other manuscripts prior to 1600

Alexandrinus Bibl. Patriarc. 87 (26. 606. 76) 16th century, with commentary by Theodore Metochites in the margins.
Ambrosianus gr. 725, R 119 sup. 16th century.
Ambrosianus gr. 1026. G 115 inf. 16th century.
Berolinensis gr. In fol. 67^2, 13th–14th century.
Bononiensis Bibl. Univ. 2302 (*olim* 216) 15th–16th century, copied at Padua by Zacharias Kallierges the Cretan.
Cantabrigiensis Bibl. Univ. 190 (Dd. IV 16), copied at Florence in 1441.
Cantabrigiensis Bibl. Univ. Add. 1732, beginning of 14th century.
Laurentianus 87,20 (v in Bekker 1870, A in Longo 1961) 14th century.

Lugduno-Batavus Vossianus gr. Q 3, 13th century.
Lugduno-Batavus Vossianus gr. F 63, end of 15th century.
Matritensis Bibl. Nat. 4563 (*olim* N 26) 1470, copied by Constantin Lascaris.
Monacensis gr. 200, 15th–16th century.
Oxoniensis Bodl. Bywater 4[1], 1418, copied on Crete by Jean Chionopoulos.
Oxoniensis Coll. Corp. Christi 104, 15th century, copied by Jean Thessalos Scutariotas, first three books only.
Parisinus gr. 1861 (c in Bekker 1870) 15th century, copied by George Gregoropoulos.
Parisinus gr. 1866, 15th century, excerpts only.
Parisinus gr. 2033, 15th century, copied by Michel Apostolios.
Parisinus gr. 2063 (Z in Longo 1961) 14th century, stops at A 3.269b33.
Parisinus gr. 2595[2], 13th–14th century.
Scorialensis Σ III 2 (101 Revilla) 16th century.
Scorialensis T II 13 (152 Revilla) 15th century, copied by Antonio Damilas of Milan.
Scorialensis T II 21 (160 Revilla) 16th century, first three books only.
Vaticanus Reginae Suecorum gr. 123, 16th century.
Vaticanus gr. 252, 16th century.
Vaticanus gr. 254, 14th century, with Simplicius' commentary.
Vaticanus gr. 2201.
Vindobonensis phil. gr. 75, 1445, copied by Demetrios Kykandyles.

B. *Modern critical editions of the Aristotle's* De caelo

Allan, D.J. (1955) *Aristotelis de caelo libri quattuor*, 3rd edn 1961 (Oxford).
Bekker, I. (1870) *Aristotelis opera* (Berlin).
Longo, O. (1961) *Aristotele. De caelo* (Florence).
Moraux, P. (1965) *Aristote. Du ciel* (Paris).
Prantl, C. (1881) *De coelo, et de generatione et corruptione* (Leipzig).

C. *Commentaries and translations*

C1. *Ancient to early modern commentaries in Greek and Latin*[3]

4th century

Themistius, *In libros Aristotelis* De caelo *paraphrasis, hebraice et latine. Sēfer hashāmayim we-ha-ʿōlām le-Arisṭō ʿim pērūsh Tāmisṭi'ūs* (ed. Landauer 1902).[4]

[3] Following Edward Grant in *Planets, Stars, and Orbs: The Medieval Cosmos, 1200–1687* (Cambridge, 1994). The original dates of publication and/or modern editions are listed where available.

[4] Hebrew translation by Zeraḥyah ben Yiṣḥāq ben Sheʾaltiʾēl, made in 1284, from

6th century

Simplicius of Cilicia, *In Aristotelis de caelo commentaria* (ed. Heiberg 1894).

9th century

Pseudo-Avicenna, *Liber celi et mundi* (ed. Gutman 2003).

12th century

Gerard of Cremona, *Aristoteles, Liber de celo et mundo* (ed. I. Opelt 1971). Translation from the Arabic of ibn al-Biṭrīq (9th century) into Latin.

13th century

Albertus Magnus, *De coelo et mundo* (ed. Hossfeld 1971).
Alvaro of Toledo, *De substantia orbis* (ed. Alonso Alonso 1941).
Gunsalvi of Burgos (ed. Renaud 1973).
John of Jandun, *Quaestiones in Aristotelis de caelo*.
Michael Scot, *Averrois Cordubensis commentum magnum super libro de caelo et mundo Aristotelis* (ed. Arnzen 2003).
Petrus de Alvernia, *Quaestiones supra librum de caelo et mundo* (ed. Galle 2003).
Thomas Aquinas, *In libros Aristotelis de caelo et mundo expositio* (Commissio Leonina 1886, ed. Spiazzi 1952).
Thomas de Bungeye, *Quaestio in Aristotelis de caelo et mundo* (ed. Parker 1968).
William of Moerbeke, *Simplicii in Aristotelis de caelo* (ed. Bossier, Vande Veire, and Guldentops 2004).

14th century

Albertus de Saxonia, *Quaestiones in libros Aristotelis de caelo et mundo* (ed. Patar 2008).
Ioannis Buridanus, *Expositio et quaestiones in Aristotelis de caelo* (ed. Moody 1942, ed. Patar 1996).
Nicole Oresme, *Le livre du ciel et du monde* (ed. Menut and Denomy 1968).
Paul of Venice, *Liber celi et mundi*.

15th century

Johannes de Magistris, *De caelo et mundo*.
Thomas Bricot, *Quaestio in Aristotelis de caelo et mundo* (1486).

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the lost Arabic version of Yaḥyā ibn ʿAdī, died 974), and the Latin translation from the Hebrew by Moses Alatino (16th century).

16th century

Quaestiones in de caelo
Conimbricenses, or Coimbra Jesuits (1592, reprinted 1598).
Galileo Galilei (ed. Wallace 1977).
Johannes Major (1526).

17th century

Quaestiones in de caelo
Pedro Hurtado de Mendoza (1615).
Bartholomew Amicus (1626).
Raphael Aversa (1627, vol. 2).
Roderigo de Arriaga (1632).
Bartholomaeus Mastrius and Bonaventura Bellutus (1640).
Franciscus de Oviedo (1649).
Thomas Compton-Carleton (1649).
Franciscus Bonae Spei (1652).
Melchior Cornaeus (1657).
Sigismundus Sebellonus (vol. 2, 1663).
George de Rhodes (1671).
Illuminatus Oddus (1672).
Johannes Poncius (1672).

C2. *Medieval translations and commentaries in Arabic and Hebrew*

9th century

Yaḥyā (Yūḥannā) ibn al-Biṭrīq, *Arisṭūṭālīs, Kitāb al-Samāʾ wa-l-ʿālam [Book on the Heaven and the World]* (ed. Badawī 1961). Translation from the Syriac.[5]
Ḥunayn ibn Isḥāq (?), [*Sixteen Questions on Aristotle's Book on the Heaven and the World*] (ed. Gutman 2003), Latin version.[6]

[5] A defective printing from one ms., presenting for book 1 the revised version of Mihrān (v. infra); critical edition in preparation by Gerhard Endress, *Aristoteles Semitico Latinus* (Leiden 2010). Variants against the Greek ms. tradition have been discussed, on the basis of the notes in Endress 1966, by Tarán (1974).

[6] Sixteen *quaestiones* on all parts of *De caelo*. The authorship of Ḥunayn, which can be deduced from a note in Ibn al-Nadīm (died 980), *al-Fihrist*, 250.30 (Flügel) is uncertain. The medieval tradition attributes the text to Avicenna. The Hebrew version, while made from a Latin version, has numerous revisions and additions in comparison to the extant Latin text; see Glasner (1996). While there are certain parallels with the commentary by Themistius, this is not a paraphrase of the latter; see Glasner (1996) *pace* Alonso Alonso (1951).

10th / 11th century

Abū l-Faraǧ ʿAbdallāh ibn al-Ṭayyib, *Arisṭūṭālis, [Kitāb al-Samāʾ wa-l-ʿālam]*. Arabic translation of the *De caelo*.[7]

Abū Sahl al-Masīḥī, ʿĪsā ibn Yaḥyā, *Talḫīṣ kitāb al-Samāʾ wa-l-ʿālam li-Arisṭū [Commentary—Paraphrase of De caelo]*. Ms. Leiden, Biblioteek der Rijksuniversiteit, Acad. 44, no. 4.[8]

Abū ʿAlī ibn Sīnā (Avicenna), *Kitāb al-Šifāʾ [The Book of the Cure]*, Part II, *al-Ṭabīʿīyyāt [Physica]*, vol. 2: *al-Samāʾ wa-l-ʿālam [On the Subject Matter of De caelo]*, (ed. Qāsim 1968).[9]

Themistius, *In libros Aristotelis de caelo paraphrasis, hebraice et latine. Sēfer ha-šāmayim we-ha-ʿōlām le-Arisṭō ʿim pērūš Tāmisṭiʾūs* (ed. Landauer 1902).[10]

12th century

Ibn al-Ṣalāḥ (Abū l-Futūḥ Aḥmad ibn Muḥammad ibn al-Sarī), *Qaul fi Bayān al-ḫaṭaʾ al-ʿāriḍ fī maʿnā maḫkūr fī l-maqāla al-ḫāliḫa min kitāb al-Samāʾ wa-l-ʿālam [Explanation of an Error Occurring on a Matter Mentioned in Book 3 of the Book On the Heaven and the Worlds]* (ed. Türker 1964).[11]

Averroes (Abū l-Walīd Muḥammad ibn Aḥmad ibn Rushd), *Kitāb al-Samāʾ wa-l-ʿālam [Epitome of De caelo]*, see Rasāʾil ibn-Rushd 1946, repr. ed. Jéhamy 1994 (ed. Eichner 2010).

———, *Talḫīṣ [kitāb] al-Samāʾ wa-l-ʿālam [Middle Commentary on De caelo]. Talḫīṣ al-Samāʾ wal-ʿālam* (ed. Jamāl-al-Dīn al-ʿAlawī [Jamal-Eddine Alaoui] 1984).

———, *Šarh (Tafsīr) kitāb al-Samāʾ wa-l-ālam. [Commentary on Aristotle's Book On the Heaven and the Universe]*. Facsimile of ms. 11821, National Library, Tunis (ed. Endress 1994), Latin version by Michael Scotus (ed. Arnzen 2003).

———, *Maʾamar be-ʿEṣem ha-Galgal [De substantia orbis]*. Critical edition of the Hebrew text of lost Arabic original with English translation and commentary (ed. Hyman 1986), Latin version by Alvaro de Toledo (ed. Alonso Alonso 1941).

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[7] Large fragments preserved in ms Paris, Bibliothèque nationale de France, arabe 2281. The translator, a physician of Baghdad who died in 1043, was the author of a number of commentaries of Aristotelian works. The lemmata of Aristotle's text are accompanied by a concise literal commentary in the tradition of the Alexandrian *lexis*, preserving also the division into lecture courses, *pragmata*, Arabic *taʿlīm*.

[8] Abū Sahl, a Christian physician from Khurasan who died in 1010, was a teacher of Avicenna in medicine.

[9] Translated by Gunsalvi of Burgos *ca.* 1280. The subject matter of *De caelo* 3 is treated in the context of the following part of the *Šifāʾ, al-Kawn wa-l-fasād* ("*De generatione et corruptione*"), also edited by Qāsim.

[10] See n. 4 above.

[11] A critique of *De caelo* 3.8 306b3–8.

Mihrān ibn Manṣūr al-Masīḥī, *Kitāb al-Samāʾ wa-l-ʿālam* (ed. Badawi 1961). Revision of Ibn al-Biṭrīq's translation of book 1, dated 1158.[12]

C3. *Modern editions and translations of pre-modern commentaries*

Alaoui, J.-E. (Ǧamāl-al-Dīn al-ʿAlawī) (1984) *Averroes, Talḫīṣ [kitāb] al-Samāʾ wa-l-ʿālam (Middle Commentary on De caelo). Talḫīṣ al-Samāʾ wal-ʿālam*, Manšūrāt Ǧāmiʿat Sīdī Muḥammad ben ʿAbdallāh, Kulliyyat al-ādāb wa-l-ʿulūm al-insaniyya bi-Fās 1 (Fes).

Alonso Alonso, M. (1941) *Commentario al "De substantia orbis" de Averroes (Aristotelismo e Averroismo) por Alvaro de Toledo* (Madrid).

Arnzen, R. (2003) *Averrois Cordubensis commentum magnum super libro De celo et mundo Aristotelis, ex recognitione Francis James Carmody* (Leuven). Latin translation by Michael Scotus.

Aujac, G.; Brunet, J.-P.; and Nadal, R. (1979) *Autolycos de Pitane. La sphère en mouvement, Levers et couchers héliaques, Testimonia* (Paris).

Badawī, ʿAbd-al-Raḥmān (1961) *Arisṭūṭālīs, al-Samāʿwa-l-Āḫār al-ʿulwiyya* (Cairo). A revision of Ibn al-Biṭrīqʾ translation of book 1 by Mihrān ibn Manṣūr al-Masīḥī, dated 1158.

Bossier, F.; Vande Veire, C.; and Guldentops, G. (2004) ed. *Simplicius. Commentaire sur le traité du ciel d'Aristote. Traduction de Guillaume de Moerbeke*, vol. 1 (Leuven).

Bowen, A.C. (2003–2008) "Simplicius' Commentary on Aristotle, *De caelo* 2.10–12: An Annotated Translation," *SCIAMVS* 4: 23–58, *SCIAMVS* 9: 25–131.

Capra, L. (1993) *Torquato Tasso. Note di Torquato Tasso a "De Caelo" di Aristotele* (Rome).

Commissio Leonina, (1886) *S. Thomae de Aquino in libros Aristotelis de caelo et mundo expositio*. (Rome/Paris).

Eichner, H. (2010) *Averroes: Kitāb al-Samāʾ wa-l-ʿālam (Epitome of De caelo)*, *Averrois Opera*, ser. arab. 23 (Paderborn).

Endress, G. (1994) *Šarh (Tafsīr) kitāb al-Samāʾ wa-l-ālam. Commentary on Aristotle's Book* On the Heaven and the Universe, Facsimile ed., reproduced from ms. 11821, National Library, Tunis. Publications of the Institute for the History of Arabic-Islamic Science, Series C: Facsimile editions, vol. 57 (Frankfurt am Main).

Galle, G. (2003) *Petrus de Averni: Questions on Aristotle's De Caelo* (Leuven).

Gutman, O. (2003) *Avicenna, Liber celi et mundi: A Critical Edition with Introduction* (Leiden).

Hankinson, R.J. (2006) *Simplicius: On Aristotle's "On The Heavens 1.10–12"* (Ithaca).

Heiberg, I.L. (1894) *Simplicii in Aristotelis de caelo commentaria*, Commentaria in Aristotelem Graeca 7 (Berlin).

Hossfeld, P. (1971) *Alberti Magni opera omnia edenda curavit Institutum Alberti Magni Coloniense*, v. 1, *De caelo*. (Cologne).

[12] Mihrān was a Christian physician at the Artuqid court of Diyābakr.

Hyman, A. (1986) *Averroes'* De substantia orbis: *Critical Edition of the Hebrew Text with English Translation and Commentary [Maʾmar b-ʿeṣem ha-galgal le-Ibn Rushd b-targūm ʿibrī]*, Corpus Philosophorum Medii Aevi, *Opera Averrois*, Medieval Academy Books 96 (Cambridge MA/Jerusalem).
Jéhamy, G. (1994) *Rasāʾil Ibn Rušd al-falsafiyya, 2: Risālat [!] al-Samāʾ wa-l-ʿālam* (Beirut).
Landauer, S. (1902) *Themistius. In libros Aristotelis de caelo paraphrasis*, Commentaria in Aristotelem Graeca 5 (Berlin).
Menut, A.D. and Denomy, A.J. (1968) *Le Livre du ciel et du monde* (Madison).
Moody, E.A. (1942) *Iohannis Buridani quaestiones super libris quattuor de caelo et mundo* (Cambridge).
Mueller, I. (2004) *Simplicius: On Aristotle's "On The Heavens 2.1–9"* (London).
———, (2005) *Simplicius: On Aristotle's "On The Heavens 2.10–14"* (London).
Parker, B.S. (1968) *Thomas de Bungeye's Commentary on the First Book of Aristotle's* De caelo. PhD Thesis, Tulane University (New Orleans, LA).
Patar, B. (1996) *Ioannis Buridani expositio et quaestiones in Aristotelis de caelo* (Louvain).
———, (2008) *Alberti de Saxonia quaestiones in Aristotelis de caelo* (Louvain).
Renaud, M. (1973) "Le "De celo et mundo" d'Avicenne," *Bulletin de philosophie médiévale* 15: 92–120.
Qāsim, Maḥmūd (1968) *Abū ʿAlī Ibn Sīnā (Avicenna), Kitāb al-Šifāʾ [The Book of the Cure]*, Part II, *al-Ṭabīʿiyyāt [Physica], vol. 2: al-Samāʾ wa-l-ʿālam [On the Subject Matter of* De caelo*]* (Cairo).
Raimondo, S. (1952) *Thomas Aquinas. In Aristotelis libros de caelo et mundo, de generatione et corruptione, meterologicorum expositio* (Turin).
Rasaʾil ibn Rušd (1946) *Averroes: Epitome of Aristotle's* De caelo (Hyderabad).
Spiazzi, R. M (1952) *S. Thomae de Aquino in libros Aristotelis de caelo et mundo expositio* (Rome/Paris).
Türker, M. (1964) "İbnü ʾṣ-Ṣalaḥʾın *De Coelo* ve onun şerhleri hakkındaki tenkitleri," *Araştırma* 2: 1–79.
Wildberg, C. (1987) *Philoponus: Against Aristotle, on the Eternity of the World*, (London).
———, (1991) *Simplicius: Against Philoponus on the Eternity of the World* (London).

C4. *Modern editions, translations, and commentaries*

Bekker, I. (1870) *Aristotelis opera* (Berlin).
Dalimier, C. and Pellegrin, P. (2004) *Aristote. Traité du ciel* (Paris).
Elders, L. (1996) *Aristotle's Cosmology: A Commentary on the* De caelo (Assen).
Gigon, O. (1950) *Vom Himmel, Von der Seele, Von der Dichtkunst* (Zurich).
Guthrie, W.K.C. (1939) *On The Heavens*, Loeb Classical Library (Cambridge).
Jori, A. (1999) *Il cielo* (Milan).
Leggatt, S. (1995) *Aristotle: On The Heavens I and II, with an Introduction, Translation and Commentary* (Warminster).
Longo, O. (1961) *Aristotele. De caelo* (Florence).

Moraux, P. (1965) *Aristote. Du ciel* (Paris).
Prantl, C. (1857) *Aristoteles' Vier Bücher über das Himmelsgebäude und Zwei Bücher über Entstehen und Vergehen* (Leipzig).
——, (1881) *De coelo, et de generatione et corruptione* (Leipzig).
Stocks, J.L. (1902) *De Caelo*, in W.D. Ross (ed.) *Works of Aristotle* (Oxford) vol. 2. Repr. in R. McKeon (ed.) *The Basic Works of Aristotle* (New York, 1941) 395–466, and in J. Barnes (ed.) *The Complete Works of Aristotle: The Revised Oxford Translation* (Princeton, 1981) 447–511.
Tricot, J. (1949) *Aristote. Traité du ciel. Traduction et notes*, (Paris).

D. *Modern monographs, collected studies, and articles on Aristotle's* De caelo

Algra, K. (1995) *Concepts of Space in Greek Thought* (Leiden).
Allan, D.J. (1950) "Mediaeval Versions of Aristotle, *De caelo*, and of the Commentary of Simplicius," *Mediaeval and Renaissance Studies* 2: 82–120.
Alonso Alonso, M. (1951) "Ḥunayn traducido al latín por Ibn Dāwūd y Domingo Gundisalvo," *Al-Andalus* 16: 37–47.
Ashley, B.M. (1958) "Aristotle's Sluggish Earth: The Problematics of the 'De caelo'," *Albertus Magnus Lyceum* 18. Repr. in *The New Scholasticism* 32 (1958): 1–32 and 202–234.
Barnes, J. (1981) *The Complete Works of Aristotle: The Revised Oxford Translation* (Princeton).
Bernadete, J. (1957) "Aristotle's Argument from Time," *Journal of Philosophy* 54: 151–152.
Berti, E. (2002) "La causalità del Motore immobile secondo Aristotele," *Gregorianum* 83: 637–654.
Blair, P.S.F. (1988) *Aristotle* De caelo *1.9 279a18–b3: Who Rules the Cosmos?* MA Thesis, University of Texas at Austin.
Bödéus, R. (1990) "La prétendue intuition de Dieu dans le 'De coelo' d'Aristote," *Phronesis* 35: 245–257.
Bodnár, I.M. (1997) "Movers and Elemental Motions in Aristotle," *Oxford Studies in Ancient Philosophy* 16: 81–117.
——, (2005) "Aristotle's Rewinding Spheres: Three Options and Their Difficulties," *Apeiron* 38: 257–275.
Bodnár, I. and Pellegrin, P. (2006) "Aristotle's Physics and Cosmology," in M.L. Gill and P. Pellegrin (edd.) *Blackwell Companions to Philosophy: A Companion to Ancient Philosophy* (Oxford) 270–291.
Bogen, J. and McGuire, J.E. (1987) "Aristotle's Great Clock: Necessity, Possibility, and The Motion of The Cosmos In 'De Caelo I:12'," *Philosophy Research Archives* 12: 387–448.
Bolton, R. (2009) "Two Standards for Inquiry in Aristotle's *De caelo*," in A.C. Bowen and C. Wildberg (edd.) *New Perspectives on Aristotle's* De caelo (Leiden) 51–82.
Bolzan, J.E. (1973) "Aristoteles, 'De caelo,' 310B11–14," *Journal of the History of Philosophy* 11: 443–451.

——, (1981) "Democrito, Aristoteles y la flotacion de los cuerpos," *Dialogos* 16: 109–114.
Bos, A.P. (1988) "'*Mantei*' in Aristotle, 'De caelo' II 1," *Apeiron* 21: 29–54.
Bossier, F. (1975) *Filologisch-historische navorsingen over die middeleeuwse en humanistische Latijnse vertalingen van den commentaren van Simplicius*, 3 vols, Doctoral dissertation (Leuven).
——, (1987) "Traductions latines et influences du commentaire *In de caelo* en Occident (XIII'–XIV' siecles)" in I. Hadot (ed.) *Simplicius, sa vie, son œuvre, sa survie* (Berlin) 289–325.
Bourgey, L. (1975) "Observation and Experiment in Analogical Explanation," in J. Barnes, M. Schofield, and R. Sorabji (edd.) *Articles on Aristotle: 1. Science* (London) 175–182.
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